

1 26. The surgical instrument of claim 24, further comprising a heat source coupled to the
2 advancement mechanism.

1 27. The surgical instrument of claim 26, further comprising a thermocouple coupled to
2 said heat source.

1 28. The surgical instrument of claim 26, wherein the transfer mechanism is a pivoting
2 carrier adjacent a distal end of the trocar.

REMARKS

This Amendment is in response to the Official Action mailed November 7, 2001. Applicants respectfully request reconsideration of the above referenced application in view of the above amendments and the following remarks.

Applicants express their appreciation to the Examiner for the indication that claims 13-16 would be allowable if rewritten in independent form.

For the convenience and reference of the Examiner, Applicants have presented the following remarks in the order in which the corresponding issues were raised in the Office Action.

1. Objection To The Drawings

The Examiner objects to the drawings on the grounds that the shield is not shown in the figures. This ground of objection is rendered moot by the cancellation of claim 14.

The Examiner also objects to the drawings on the grounds that heat source 1060 is not shown in the figures. Applicants amend the Specification and Figure 10 to show the heat source. This amendment is consistent with original claim 14.

The Examiner also objects to the drawings on the grounds that element 1030 (magazine 1030 at page 13, line 19) is not shown in Figure 11. An amendment to Figure 11 is submitted herewith.

2. Objection To The Specification

The Examiner objects to the Specification with regard to the trocar, flexible cannula and drill (Figures 5-7 and page 11, lines 9-10). The Examiner also objects to the disclosure for this same reason.

Applicants intended for the cannula to be positioned inside the trocar. However, since a cannula is more typically positioned outside a trocar, Applicants globally replaced the word "cannula" in the Specification with "catheter".

3. Objection To The Claims

The Examiner objects to claim 12. This objection is rendered moot by the cancellation of this claim.

4. Rejection of Claims 9-16 Under 35 U.S.C. §112, Second Paragraph

The Examiner rejects claims 9-16 under 35 U.S.C. §112, second paragraph. This ground of rejection is rendered moot by the cancellation of these claims.

5. Rejection of Claims 9-12 Under 35 U.S.C. §102(e)

Claims 9-12 stand rejected under 35 U.S.C. §102(e) as being anticipated by Schmieding (U.S. Patent No. 6,270,503). This ground of rejection is rendered moot by the cancellation of these claims.

6. Allowability of Claims 13-16

The Examiner indicates that claims 13-16 would be allowable if rewritten in independent form. Applicants submit herewith new claims 24-28 which incorporate the concept of causing an implantable prosthesis to be introduced into the trocar lumen when the drill trip is retracted proximal relative to the port. For example, independent claim 24 specifies that the implantable prosthesis is advanced through a port into the trocar lumen. This concept is shown in Figure 12 of the application. By contrast to independent claim 24, Schmieding does not have any mechanism by which an implantable prosthesis may be transferred into a trocar lumen. Hence, the pending claims are readily distinguishable over Schmieding. Their allowance is respectfully requested.

CONCLUSION

In view of the foregoing, Applicants respectfully submit that the Application is in condition for allowance. A notice to that effect is respectfully requested. Should the Examiner believe that a telephone interview would help facilitate the prosecution of this Application and its movement toward issuance, the Examiner is invited to contact the undersigned at the Examiner's earliest convenience.

Respectfully submitted,
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Version With Markings Showing Changes Made

In the Specification

Paragraph 7, at page 5, has been amended as follows:

FIG. 6 illustrates a schematic side view of a long [cannula] catheter for use in preparing sub-chondral recesses and implanting osteochondral plugs, representing an embodiment of the invention.

Paragraph 6, at page 9, has been amended as follows:

The irrigating system involves a fluid (irrigant) source (typically two liter bags of normal or isotonic saline), connecting tubing to include tubing clamps for mechanically inhibiting and controlling the flow of the irrigating solution, the percutaneous [cannula] catheter for insertion into the joint space to which the connecting tubing is attached providing the portal for irrigant supply, and a second portal or outflow port allowing irrigating fluid to exit the joint capsule which may have an extension tube to direct the outflow of the irrigant away from the operator.

Paragraph 1, at page 10, has been amended as follows:

Either (or both) of these [cannulas] catheters may be incorporated into a [cannula] catheter system allowing the introduction of a "scope" (rod lens apparatus for viewing the interior of the joint space) or the introduction of all manner of interventional tools, to include probes cutters electrosurgical and electrothermal instruments. Some surgeons utilize a pump system that sense intra-articular pressure and maintains that pressure to insure distraction of the joint and adequate hemostasis. Otherwise, the intra-articular (joint capsule) pressure is generated by elevating the solution bags above the level of the patient making use of a simple gravity supply.

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Paragraphs starting at paragraph 1, page 11, have been amended as follows:

In the first instrument approach, the invention includes exchangeable [cannula] catheter type devices. In this case, separate devices perform either the preparation function (e.g., drill the recess) or the delivery function (e.g., implant the prosthesis).

The exchangeable instruments for recess preparation can include a long catheter [cannula] and a drill. The long catheter [cannula] can be approximately 20 cm long with an internal diameter of approximately 3 mm. The long catheter [cannula] is inserted into the blunt trocar and the drill is inserted into the long catheter [cannula]. The drill needs to reach the subchondral bleeding bed. The drill can include a shaft of flexible wire coupled to a rigid tip. The flexible wire should extend beyond the proximal end of the long catheter [cannula]. The drill can have a rigid tip of appropriate length (e.g., approximately 5 mm to approximately 15 mm) with a diameter of approximately 3 mm.

The exchangeable instruments for implantation can include a flexible catheter [cannula] serially loaded with several, for example three, substrates. The flexible [cannula] catheter is inserted into the blunt trocar. The flexible [cannula] catheter can utilize a pressure flow mechanism to press-fit the plugs into the recesses that are located in the prepared bed.

Paragraph 5, at page 11, has been amended as follows:

Referring to FIG. 6, a flexible [cannula] catheter 600 is depicted. The flexible [cannula] catheter 600 has a proximal end 610 and a distal end 620.

Paragraph 3, at page 12, has been amended as follows:

However, the use of exchangeable instruments requires the physician to alternately insert the two different instruments via the trocar and [cannula] catheter as described above. This exchange of instruments requires time and effort. To save time, the physician can drill and plurality of recesses and then switch instruments to implant a corresponding plurality of plugs. This has the drawback of requiring the physician to realign the implantation instrument with each of the recesses previously

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produced by the first instrument. If the realignment is not done within tolerance, the plug may not be implanted properly.

Paragraph 1, at page 13, has been amended as follows:

The combined surgical instrument 1000 includes a heat source 1060 coupled to the advancement mechanism 1040. The heat source 1060 is powered by a pair of leads 1070. The combined surgical instrument 1000 includes a thermocouple 1080. The thermocouple 1080 is connected to a pair of leads 1090.

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